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Herpetology in the Report of the First Scientific Expedition to Manchuokuo

C. Kenneth Dodd, Jr.

5222 N.W. 56th Court, Gainesville, Florida 32653, USA. terrapene600@gmail.com

Manchuria is a region in northeastern China that historically had been settled by the Manchu ethic group, although the origin of the name itself is uncertain. In 1931, the Empire of Japan invaded and occupied Manchuria and in 1932 proclaimed the puppet state of Manchuokuo (spelled Manchukuo in the West) with the former Chinese Emperor Puyi as its figurative head. Puyi later was named the Emperor of Manchuria in 1934, although he wielded no political power and the "state" was firmly under Japanese control. The nation-state remained extant until the Soviet army invaded in 1945 at the end of World War II. The territory was returned to Chinese control in 1946. The First Scientific Expedition to Manchuokuo (FSEM) occurred during the transition from Han Chinese rule to Japanese rule, when Imperial Japan was interested in demonstrating to the world it could create a modern multi-ethnic Pan-Asian state (Lin, 2014). From the mid to late 1930s until the end of the war, however, conditions deteriorated toward brutality and totalitarianism, which led to the Second Sino-Japanese War.

The name Jehol is actually a romanized name for the city and province formerly known as Rehe in northeastern China; the city of Rehe is now known as Chengde. Jehol was established as a Special Administrative Unit in 1914 and a province by the Republic of China in 1923. In 1933, the Imperial Japanese Army invaded Jehol to form a buffer zone between China and the puppet state of Manchuokuo, whereupon it was subsequently annexed by the Empire of Manchuria and named as a province within the Empire. For a short time after World War II, it remained as a province of the People's Republic of China but with slightly different borders. In 1955, Jehol Province was subsumed within Hebei Province, Liaoning Province, Tianjin, and Inner Mongolia. The First Scientific Expedition to Manchuokuo centered its activities in Jehol between Chifeng, Chaoyang, and Chengde, the largest cities at the time, with occasional forays north or south of these cities, such as to the wetlands along the Chaogedu'er River in what is today the Yudaokou Grassland Forest Scenic Park.

The Expedition

Imperial Japan had only recently acquired the region know as Jehol when the expedition was formed. The reasons behind the expedition were unlikely due to a benevolent need to understand the region's natural history. The first volume in the final report makes clear that there were other reasons, including to document diseases and their insect vectors (Tokunaga, 1934; p. 53–54). Lin (2014) suggested three reasons for the expedition: 1) Politics, as a means of asserting control of an area with abundant natural resources and generating enthusiasm among the Japanese populace [i.e., it would help justify Imperial expansion as being good for Japanese with limited economic opportunities at home]; 2) Advancing the notion of transforming a backward region by a modern colonial Asian power [i.e., colonialism can be justified as benefitting the local people]; and 3) by pursuing scientific knowledge in Manchuria, the expedition was part of a power struggle in a long-standing cultural war between China and Japan [i.e., Japan wanted to assert cultural superiority over the Han Chinese who had come to dominate the Manchus]. Thus, the reasons for the expedition were complex and likely not entirely for a heuristic desire to understand the region for its own sake. Even in the West, the activities and scale of the expedition were quickly noticed (Anonymous, 1935).

The First Scientific Expedition to Manchuokuo was formed under at the behest of Viscount Akira Toki of the War Office of Japan under the leadership of Shigeyasu Tokunaga (20 August 1874 – 8 February 1940), a specialist in zoology, geology, and paleontology. Tokunaga was a Professor at Waseda University where the Report of the FSEM was published. Summaries of his scientific contributions are in Tokunaga (1985) and Ōmori (2007). An obituary appeared in the Epilogue of the report of the FSEM (Nakai, 1940), as Tokunaga died of pneumonia and heart failure while the report was being finalized. A total of 62 individuals took part in the expedition, including 21 scientists plus guards, interpreters, and drivers; the expedition was joined at various times by as many as 30 soldiers from army outposts along the way. The expedition left from Hsinking (now Changchun, capital of Jilin Province and then capital of Manchuokuo) on 2 August 1933 and returned there on 12 October. Information was included in the final report from previous paleontological excavations in June in northern Manchuokuo, hence the dates listed on the final report cover field work from June to October 1933. Publication of the report was supported by the Cultural Work Bureau of the Japanese Foreign Office. In 1937, the expedition members were awarded the Asahi Cul-

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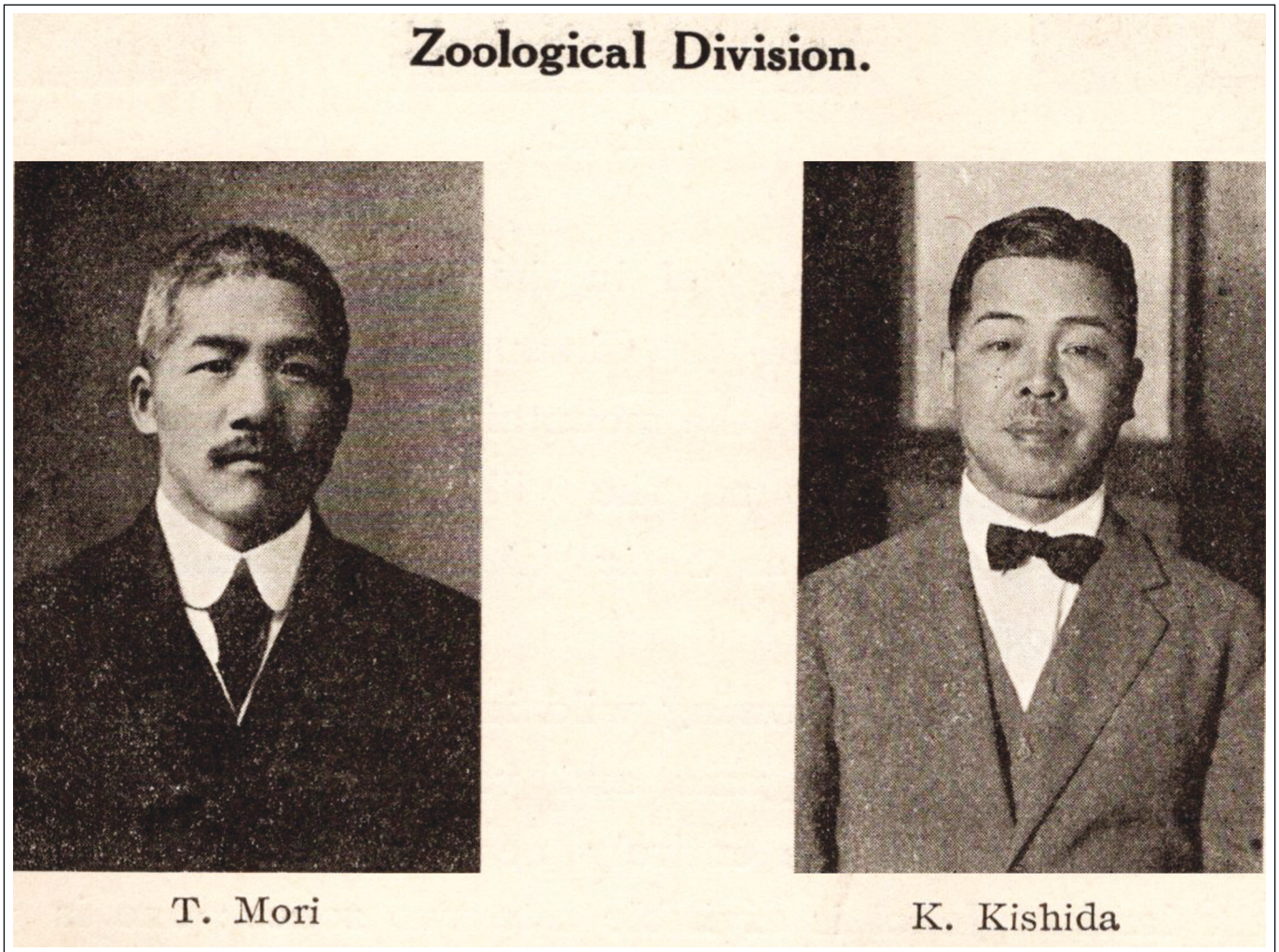

Fig. 1. Tamezo Mori and Kyûkichi Kishida, the zoologists assigned to the First Scientific Expedition to Manchuokuo. From Tokunaga (1934).

tural Prize for their "contributions to the culture of the entire world" (Tokunaga, 1940). Although maps were not included in the final report, Flick (2018: p. 11) includes a map of Jehol and the expedition's route through the region.

Collecting zoological specimens was the responsibility of Tamezo Mori (1884–1962), a naturalist then based at Keijô Imperial University in Seoul on the Korean Peninsula, and Kyûkichi Kishida (1888 – 1968) of the Zoological Research unit of the Department of Agriculture and Forestry (Fig. 1). Mori was primarily an ichthyologist who also published on the mammals, birds, and butterflies of Korea and Manchuria. Kishida was a naturalist who published primarily on spiders. Perhaps because of the late summer departure of the expedition, few individuals were collected for examination (measurements were taken on only 36 individual amphibians and only single individuals were observed of three of the snake species). In the introduction, Tokunaga (1934) reported that the region was quite arid and that much of the land was deforested, the result of a long history of overgrazing and tree cutting. In the northern part of Jehol, the habitats and faunas were part of the Mongolian deserts, whereas in the south, only remnants of native forest remained as refugia; wetlands were rare and rivers shallow. The introduction to the region (Tokunaga, 1934) includes additional information on climate, topography, geology, and a rather negative assessment of the condition of the inhabitants. It concludes with 401 black and white photos (mostly six to a page) of the expedition members and the people and landscapes of the country. These photos effectively illustrate the extreme habitat degradation and aridity of the region in 1933.

The Report

The final report of the FSEM was issued in parts from July 1934 through May 1940. It was divided into six sections: I. General Report (Fig. 2), II. Geology (including paleontology), III. Geography, IV. Botany, V. Zoology, and VI. Anthropology. The final report also included an Epilogue by Sigeyasu Tokunaga, an obituary of him, and a general index in a separate issue (Fig. 3). Sections were divided into a total of 25 volumes comprising 3,937 pages and 820 plates, many of them in color. Sections and volumes were not published sequentially. Instead, volumes were published as they were completed, so that volume numbering does not group

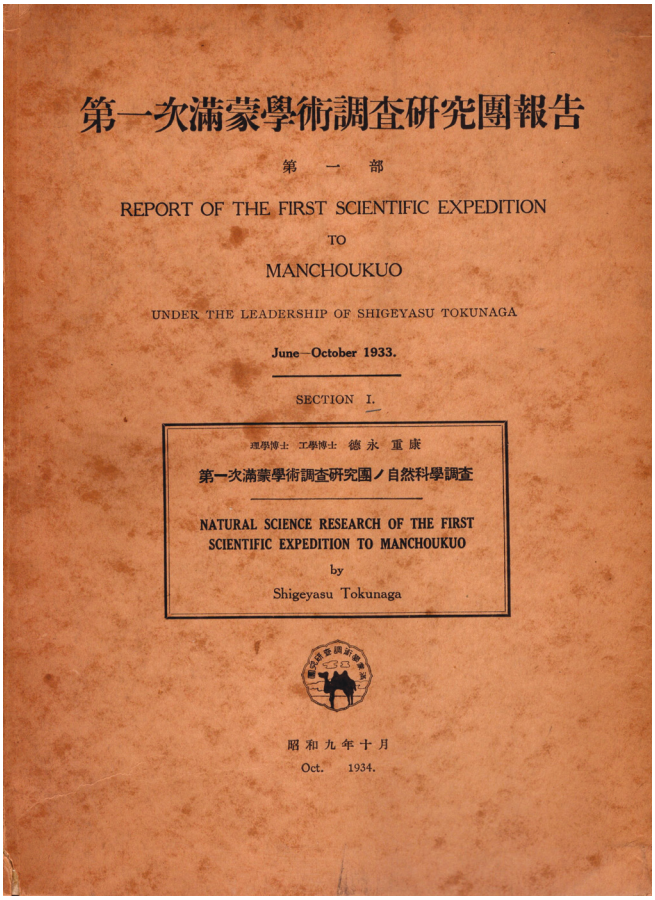

Fig. 2. Report of the First Scientific Expedition to Manchuokuo. Section 1. Natural Science Research of the First Scientific Expedition to Manchuokuo. Cover.

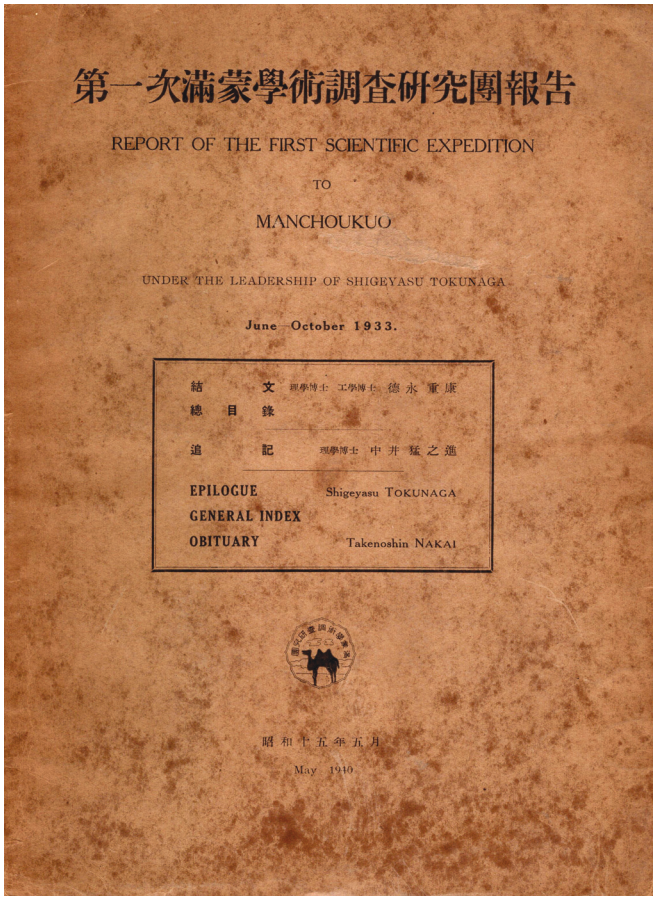

Fig. 3. Report of the First Scientific Expedition to Manchuokuo. Epilogue. Cover. The Epilogue contains a complete listing of all the volume titles, authors, and dates of issue.

taxa together by section or date. For example, the volume on amphibians and reptiles was published in December 1935 as Section V, Division II, Part II, well before the completion of much of the final report. All volumes were published in soft cover by the Office of the Scientific Expedition to Manchoukuo, Faculty of Science and Engineering, Waseda University, Tokyo. The reports were published in Japanese then translated into English within the volume either in their entirety (e.g., the volume on amphibians and reptiles) or with an extended summary. Pages are numbered sequentially and include both the Japanese and English accounts (i.e., a 70-page report might roughly have 35 pages in Japanese and 35 in English).

Some sections of the report were written by members of the expedition, but others were delegated to scientists with expertise in particular taxa. The report on the amphibians and reptiles (Fig. 4) was authored by Yaichirô Okada (24 June 1892 – 28 April 1976; Fig. 5), then at the Zoological Institute, Tokyo Higher Normal School, who was considered one of Japan's leading zoologists (Adler, 1989). By the time of the expedition, Okada had already published important monographs on Japanese frogs and reptiles. Okada was commissioned by the expedition's leader, Dr. Shigeyasu Tokunaga, to examine and identify the specimens obtained. Okada provided very detailed descriptions of the specimens, including complete species synonymies, characteristics, coloration, localities where observed, the species' distribution throughout its range, and remarks. Additional information on ecology and distribution was provided by professor Mori, who was credited within the accounts for his observations. Color plates, credited to S. Suzuki, were placed separately at the end of the amphibian and reptile accounts (Figs. 6–13). Additional information on Professor Okada is in Hubbs and Kuronuma's (1977) obituary of him.

The Herpetofauna

The FSEM reported six species of amphibians and 10 species of reptiles from Jehol (Table 1). No salamanders were found. The frogs *Bombina orientalis*, *Dryophytes japonicus,* and *Kaloula borealis* are now known to be present but were not observed (Fei et al., 2012; Borzeé, 2024). One lizard, *Scincella modesta*, and three snakes, *Euprepiophis mandarinus, Oocatochus rufodorsatus, Orientocoluber spinalis*, also were not recorded, although they are present on the western side

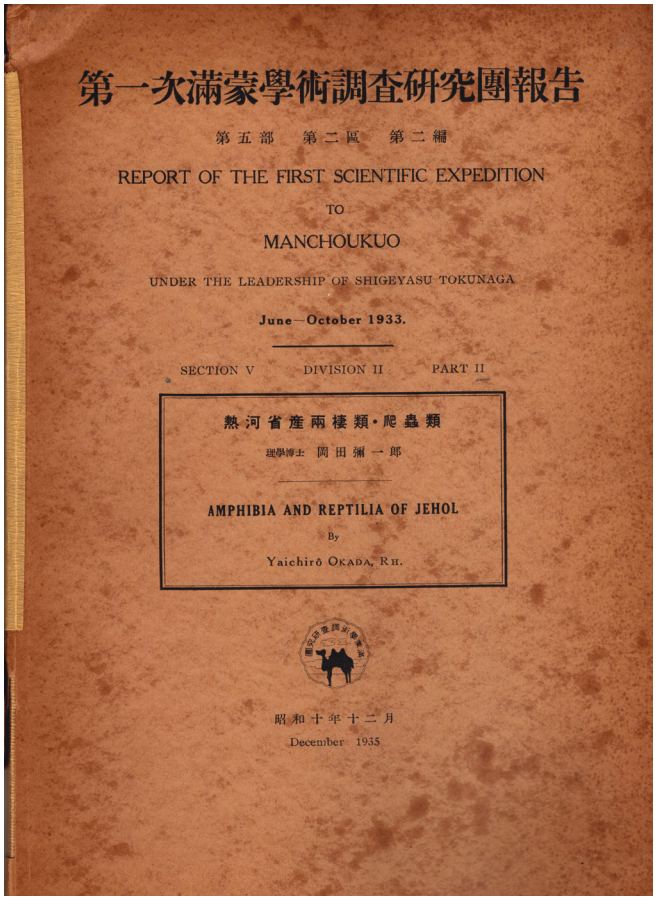

Fig. 4. Report of the First Scientific Expedition to Manchuokuo. Section V, Division II, Part II. Amphibia and Reptilia of Jehol. Cover. The amphibian (Article 1) and reptile (Article 2) sections were written separately but published together in a single volume.

Fig. 5. Yaichirō Okada. 1963. Clark L. Hubbs Papers, University of California-San Diego Digital Collections. According to the UC-San Diego Library, the use of this digital copy is permitted in support of research, teaching, and private study.

of the Bohai Sea (Li et al., 2021). No fossil amphibians or reptiles were found based on the summer fieldwork in northern Manchuokuo by Tokunaga in June 1933. Shikama (1959) later noted that fossils of *Pelodiscus maackii* were found in Quaternary deposits near where Tokunaga had worked.

Comments on Nomenclature

Bufo bufo asiatica. The common Asiatic Toad, historically referred to as *Bufo gargarizans*, is now known to comprise a species complex with many described species and subspecies over the last few decades, some of which are currently considered valid and some not (see Fu, 2023, for review). Based on the analyses summarized by Borzeé (2024) and the discussion on *Bufo gargarizans* Cantor, 1842 in Amphibian Species of the World 6.2, an Online Reference (*https://amphibiansoftheworld.amnh.org/Amphibia/Anura/Bufonidae/Bufo/Bufo-gargarizans*), the FESM likely encountered the nominal taxon of the complex, *B. gargarizans*, in Jehol.

Rana amurensis, R. asiatica, R. chensinensis. Eastern Asian brown frogs are very difficult to identify, as there is much phenotypic variation among them (see photos in Fei et al., 2012) and the discussion on *Rana chensinensis* David 1875 in Amphibian Species of the World 6.2, an Online Reference (*https://amphibiansoftheworld.amnh.org/Amphibia/Anura/Ranidae/Rana/Rana-chensinensis*). Okada (1935) mentioned three species of brown ranids of similar appearance as occurring in Jehol. The "Brown Frog" group of Asian ranids is phylogenetically close to *R. amurensis*, two individuals of which were recorded by the FSEM at Ling-yuan in Jehol. *Rana asiatica* as currently recognized, however, only occurs from southern Kazakhstan through Kyrgyzstan to central Xinjiang (China) and thus is far distant from Jehol. According to Fei et al. (2012) and Borzeé (2024), *R. amurensis* also should not occur there.

The description and illustration of *R. asiatica* in Okada (1935a) suggests a frog more similar to the species currently recognized as *R. dybowskii* (see accounts and distribution maps in Fei et al., 2012). Eleven individuals were captured at two locations. However, Fei et al. (2012) and Borzeé (2024) record *R. dybowskii* as occurring south of Jehol in Shandong Province. The widespread *R. chensinensis* also was recorded by FSEM in Jehol (nine individuals at five locations), with

Fig. 6. *Bufo* [=*Strauchbufo*] *raddei*. Plate II in FSRM (Amphibia).

Fig. 7. *Rana nigromaculata* [=*Pelophylax nigromaculatus*]. Plate IV in FSRM (Amphibia).

Fig. 8. *Rana chensinensis*. Plate VI in FSRM (Amphibia).

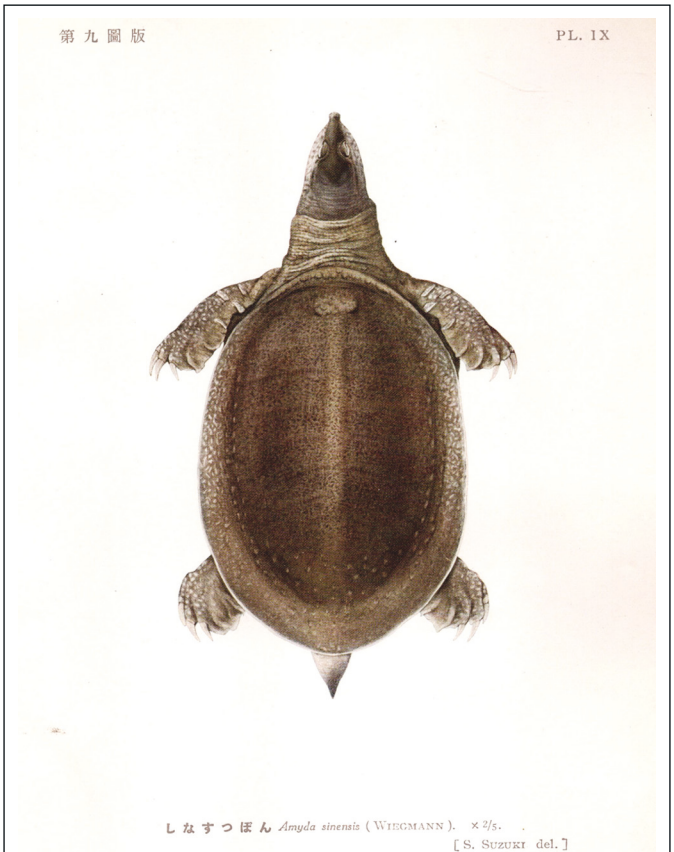

Fig. 9. *Amyda* [=*Pelodiscus*] *sinensis*. Plate IX in FSRM (Reptilia)

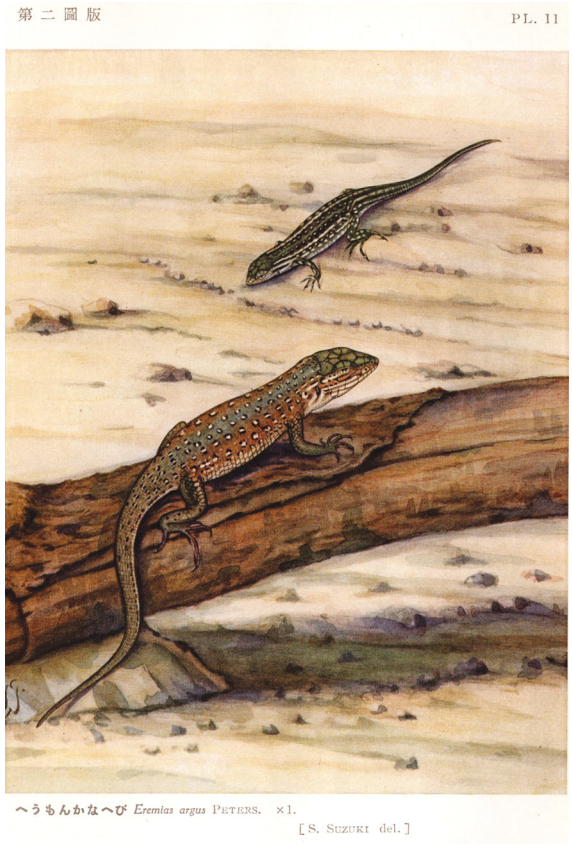

Fig. 10. *Eremias argus*. Plate II in FSRM (Reptilia).

Fig. 11. *Eumeces pekinensis* [=*Plestiodon capito*]. Plate III in FSRM (Reptilia)

Fig. 12. *Natrix tigrina lateralis* [=*Rhabdophis lateralis*]. Plate V in FSRM (Reptilia)

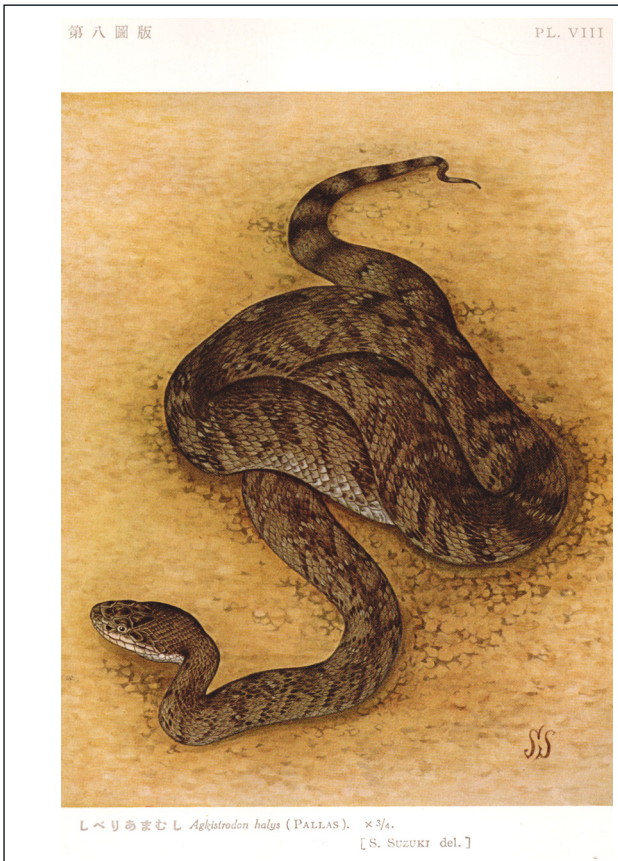

Fig. 13. *Agkistrodon halys* [=*Gloydius halys*]. Plate VIII in FSRM (Reptilia)

Table 1. Amphibians and Reptiles of Jehol (Manchoukuo). See text for additional comments on nomenclature. Plates in the FSRM are numbered in Roman numerals; Arabic numbers refer to this article.

Okada 1935	Current Name	Figure No.
Amphibians		
Bufo bufo asiaticus	*Bufo gargarizans*	I
Bufo raddei	*Strauchbufo raddei*	II, III, 6
Rana nigromaculata nigromaculata	*Pelophylax nigromaculatus*	IV, 7
Rana amurensis	*Rana chensinensis*	V
Rana chensinensis	*Rana chensinensis*	VI, 8
Rana asiatica	*Rana chensinensis*	VII
Reptiles		
Gekko swinhonis	*Gekko swinhonis*	I
Phrynocephalus frontalis	*Phrynocephalus frontalis*	I
Eremias argus	*Eremias argus*	II, 10
Eremias argus barbouri	*Eremias argus*	
Eumeces pekinensis	*Plestiodon capito*	III, 11
Natrix tigrina lateralis	*Rhabdophis lateralis*	IV, 12
Dinodon rufozonatum rufozonatum	*Lycodon rufozonatus*	V
Elaphe schrenckii anomala	*Elaphe anomala*	VI
Elaphe dione	*Elaphe dione*	VII
Agkistrodon halys	*Gloydius halys*	VIII, 13
Amyda sinensis	*Pelodiscus sinensis*	IX, X, 9

all three brown frog species observed at Ling-yuan. The collector, Tamezo Mori, noted that "*R. asiatica"* and *R. chensinensis* were found sympatric in the same habitats, thus further complicating the identification of these variable species by Okada, who worked only from preserved specimens. It is likely that all three "species" of brown frogs collected in Jehol by Mori should be referred to the highly polymorphic *R. chensinensis*.

Eremias argus, E. argus barbouri. Although treated in separate accounts, Okada recognized similarities between nominal *E. argus* and individuals described by Schmidt (1925) as *E. barbouri*. Schmidt's characters used to distinguish between the two species are variable and overlap, and Okada relegated *E. barbouri* to subspecific status under *E. argus*. Tian et al. (2024) considered *E. a. barbouri* to be an invalid taxon.

Agkistrodon halys. In Okada's era, *Agkistrodon* (= *Gloydius) halys* was considered to occur throughout much of central Asia ranging from Kazakhstan to the Pacific Coast in China. Recent molecular data have confirmed that this species is instead a complex of species, some of which are wide-ranging while others are narrowly distributed (Shi et al., 2021). Comparing the results of Shi et al. (2021, p. 102) with the route of the FSEM (Flick, 2018, p. 11), the species most likely encountered by the FSEM at Mt. Wu-ling-shan and identified by Okada was *Gloydius halys*.

Conclusion

The First Scientific Expedition to Manchuokuo provided a great amount of information to the Imperial Japanese government about the people, potential diseases and insect vectors, topography, geology, and natural resources of what was then a very poorly known part of Asia, at least to the outside world. Indeed, the need for such information may have been a driving motivation behind the expedition, rather than a pure interest in natural history (Lin, 2014). The physical conditions with respect to weather conditions (reported as "scorching"), travel (there were no roads), and supply logistics were difficult. Security was a problem for expedition members, as the Japanese invasion had stimulated opposition from the local populace, the Chinese government, and bandits (often former soldiers that had fought the Japanese in Manchuria). The expedition had to rely heavily on support from the local Kwantung Army and the Foreign Office.

Judging from the photographs, collecting conditions were harsh, particularly so late in the year when habitats already were highly degraded after a summer of high heat and aridity. It is thus not surprising that some species of amphibians and reptiles were not observed and that few individuals were collected. In terms of results, Okada confirmed the synonymy of *E. barbouri* with *E. argus* and the FSEM provided information on distribution, but no important herpetological discoveries resulted. Still, this was the first major attempt to document the herpetology of this little-explored region, and the expedition formed the basis for later research by Chinese scientists. The plates of this little-known report are beautiful, carefully produced, and merit recognition.

Acknowledgements

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References

Adler, Kraig K. 1989. Okada, Yaichirō (1892–1976). Pp. 108–109 *In: Contributions to the History of Herpetology, Volume 1*. Society for the Study of Amphibians and Reptiles, Ithaca, New York.

Anonymous. 1935. A Japanese scientific expedition to Manchoukuo. *Nature* 135:179–180.

Borzeé, Amaël. 2024. *Continental Northeast Asian Amphibians. Origin, Behavioural Ecology, and Conservation.* Elsevier Academic Press, London. vii + 231 p.

Fei, Liang, C. Ye, and J. Jiang. 2012. *Colored Atlas of Chinese Amphibians and their Distributions*. Sichuan Publishing House of Science & Technology, Chengdu, Sichuan. 620 p.

Flick, Ulrich. 2018. Die "Erste wissenschaftliche Expedition in die Mandschurei-Mongolei" von 1933 – Der historische Hintergrund. *Academic Research Society of Tohoku Gakin University, College of Liberal Arts*, Issue 180:1–17.

Fu, Jinzhong. 2023. *Bufo gargarizans*: What's in a name? *Asian Herpetological Research* 14:246–255.

Hubbs, Carl L. and K. Kuronuma. 1977. Yaichiro Okada, 1892–1976. *Copeia* 1977:206–207.

Li, Jianli, P. Li, and Y. Lu (eds.). 2021. *Atlas of Amphibians and Reptiles of Bohai Sea Rim in China*. Dalian Municipal Government, Liaoning Province, China. 250 p. [in Chinese and English]

Lin, Chih-Hung. 2014. The exploration of Empire: The Manchuria-Mongolia Academic Research Group in Rehe in 1933. *Jinan Journal of History* 17:11-41. [in Chinese]

Nakai, Takenoshin. 1940. Obituary. Pp. 5–6 *In: Report of the First Scientific Expedition to Manchuokuo. Epilogue.* Office of the Scientific Expedition to Manchoukuo, Faculty of Science and Engineering, Waseda University, Tokyo.

Okada, Yaichirô. 1935. Amphibia and Reptilia of Jehol. Report of the First Scientific Expedition to Manchoukuo. Section V, Division II, Part II: Amphibia 1-47, 7 plates; Reptilia 1-76, 10 plates. [Amphibia was published in November; Reptilia in December]

Ōmori, Masae. 2007. Dr. Tokunaga Shigeyasu: Prodigy geologist graduated the course of zoological sciences of Tokyo Imp. Univ. *Earth Science (Chikyu Kagaku)* 61: 73–75. [in Japanese]

Schmidt, Karl Patterson. 1925. New Chinese amphibians and reptiles. *American Museum Novitates* (175):1–3.

Shi, Jing-Song, J-C. Liu, R. Giri, J.B. Owens, V. Santra, S. Kuttalam, M. Selvan, K.-J. Guo, and A. Malhotra. 2021. Molecular phylogenetic analysis of the genus *Gloydius* (Squamata, Viperidae, Crotalinae), with description of two new alpine species from Qinghai-Tibet Plateau, China. *ZooKeys* 1061:87–108.

Shikama, Tokio. 1959. The Quaternary Period in Manchuria. *International Geology Review* 1(8):14–39.

Tian, Lili, R. Xu, D. Chen, N.B. Ananjeva, R.M. Brown, M.-S. Min, B. Cai, B. Mijidsuren, B. Zhang, and X. Guo. 2024. Range-wide phylogeography and ecological niche modeling provide insights into the evolutionary history of the Mongolian Racerunner (*Eremias argus*) in northeast Asia. *Animals* 14:1124.

Tokunaga, Shigemoto. 1985. Life of Shigeyasu Tokunaga. *Journal of Geography (Chigaku Zasshi)*. 94:194–196. [in Japanese]

Tokunaga, Shigeyasu. 1934. *Report of the First Scientific Expedition to Manchuokuo*. Section 1. *Natural Science Research of the First Scientific Expedition to Manchuokuo*. Office of the Scientific Expedition to Manchoukuo, Faculty of Science and Engineering, Waseda University, Tokyo. 76 p. + plates.

Tokunaga, Shigeyasu. 1940. *Report of the First Scientific Expedition to Manchuokuo. Epilogue*. p. 1–4.

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